

A NEW SPECIES OF THE SAICINE ASSASSIN BUG GENUS *CARAYONIA*
VILLIERS (HETEROPTERA: REDUVIIDAE) FROM INDOCHINA

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Abstract.—*Carayonia orientalis*, n. sp., is described based on recently collected specimens from Vietnam, Laos, and Thailand. This new species inhabits wetlands with monocots.

Key Words: Insecta, Heteroptera, Reduviidae, Saicinae, *Carayonia*, Indochina

Carayonia Villiers is a comparatively small assassin bug genus of the subfamily Saicinae, comprising nine species described from the Old World tropics and subtropics (Maldonado 1990, Malipatil 1990). The Asian fauna of the genus has been represented only by two species, *C. nitens* (Miller) from the Philippines and *C. culiciformis* Usinger from Sri Lanka, while the others occur in Australia (one species) and Africa (six species).

From recent fieldwork by us and our colleagues in Indochina, we discovered an interesting species belonging to *Carayonia*. Upon examination, we concluded that it is undescribed. In this paper, we describe the species as new and provide habitus photographs and illustrations, including the male genitalia. The diagnostic characters for the genus also are given.

All the type material is housed in the Laboratory of Insect Resources, Faculty of Agriculture, Tokyo University of Agriculture, Atsugi, Japan.

Carayonia Villiers

Carayonia Villiers 1951: 278. Type species: *Carayonia camerunensis* Villiers 1951. Original designation.

Visayanocoris Miller 1952: 89 (type of *Visayanocorinae* Miller 1952, synonymized by Villiers 1958). Type species: *Visayanocoris nitens* Miller 1952. Original designation.

Diagnosis.—Distinguished from other saicine genera by a combination of the following characters: Body shining; head pyriform, lacking dorsal transverse sulcus between eyes, with conical anteoculus; pronotum without spines at humeri; scutellar spine long; forecoxae elongate; forefemora and foretibiae with series of long, sparse, spiniform setae; foretibia apically with large, flattened, distally acute projection; tarsal segment II long; and abdomen elliptic. Detailed generic diagnoses and descriptions were provided by Villiers (1951, 1969), Miller (1952, as *Visayanocoris*) and Malipatil (1990, as *Visayanocorinae*).

Remarks.—Taxonomic placement of *Carayonia* has been controversial. It has been put either in Saicinae (Villiers 1951, 1958, 1969; Maldonado 1990) or *Visayanocorinae* (Miller 1952, China and Miller 1959, Malipatil 1990, Cassis and Gross 1995). Wygodzinsky (1966) and Putshkov and Putshkov (1996) treated *Visayanocori-*



Figs. 1–2. *Carayonia orientalis*, holotype (δ). 1, Dorsal view. 2, Lateral view.

nae as a tribe in Saicinae and placed this genus in Visayanocorini. We herein follow the Villiers and Maldonado's opinions in the placement for convenience.

The pyriform head without the dorsal transverse sulcus is a distinct feature separating this genus from the other saicine genera, and it is considered to be an autapomorphy for *Carayonia*. The genus *Wardamanocoris* Malipatil is most similar to it in sharing such characters as the forefemur with long, sparse, spiniform setae, the foretibia apically with a large, flattened, distally acute projection, and tarsal segment II much longer than the remaining segments combined (Malipatil 1990). However, the reliable sister genera are currently not determined, and a comprehensive revision is required to ascertain the accurate systematic position.

***Carayonia orientalis* Ishikawa and Okajima, new species**

(Figs. 1–12)

Description.—*Measurements* (in mm): δ / η (holotype in parentheses): Body length 3.30–3.50/3.65–3.90 (3.33). Head length including neck 0.72–0.74/0.73–0.80 (0.74); width across eyes 0.42–0.44/0.42–0.43 (0.44); interocular space 0.19–0.22/0.23 (0.21). Antenna length 2.93–3.55/3.00 (3.55); lengths of segments I, II, III and IV 1.03–1.13/1.06 (1.13), 0.37–0.41/0.37 (0.40), 0.62–0.73/0.57 (0.73) and 0.80–1.29/1.00 (1.29), respectively. Rostrum length 1.03–1.10/1.05–1.09 (1.10); lengths of segments I, II and III 0.49–0.51/0.52 (0.51), 0.23–0.26/0.23–0.24 (0.26) and 0.29–0.33/0.30–0.33 (0.33), respectively. Pronotum length 0.54–0.59/0.55–0.58 (0.54); width

across humeri 0.69–0.70/0.71–0.73 (0.70). Hemelytron length 2.14–2.47/2.26–2.38 (2.39). Lengths of femur, tibia and tarsus of forelegs 1.14–1.22/1.21–1.23 (1.22), 1.16–1.25/1.21–1.24 (1.25) and 0.60–0.65/0.62 (0.65); of midlegs 1.29–1.39/1.38–1.41 (1.39), 1.32–1.43/1.40–1.42 (1.43) and 0.54–0.66/0.68 (0.66); of hindlegs 1.64–1.88/1.90–1.95 (1.88), 2.05–2.32/2.22–2.34 (2.30) and 0.63–0.71/0.66 (0.71), respectively. Abdomen length 1.70–1.84/1.96–1.98 (1.76).

Coloration (Figs. 1–2): Body generally dark brown to fuscous. Head and thorax shining. Anterior part of head, rostrum and areas above metacoxal cavities yellowish brown. Antennal segments I and II brown, except for apex of II whitish; segment III brown, with many narrow, whitish annulations; segment IV brownish yellow, with many brown annulations on basal half. Legs brown; tibiae gradually pale toward apices; tarsi brownish yellow; mid- and hindcoxae yellowish brown. Hemelytron including veins brown to dark brown, except for pale subbasal parts. Abdomen dark brown, tinged with yellow posteriorly; laterotergites brownish yellow.

Structure: Head (Fig. 3) elliptical, 1.7 times as long as width across eyes, ventrolaterally armed with 4 pairs of long spiniform setae, and with several, long, spiniform setae in ventral disc; anteculus 0.7 times as long as postoculus, covered with short, decumbent setae; postoculus with long, sparsely distributed, suberect setae. Compound eye half as wide as interocular space in dorsal view. Antenna densely covered with short reclining and suberect setae; proportion of segments I to IV 14: 5: 9: 16. Rostrum (Fig. 3) bearing short, suberect setae; segment I with 2 pairs of long spiniform setae and a few slender setae; segment II with 3 pairs of long spiniform setae; segment III with 2 pairs of long spiniform setae; proportion of segments I to III 20: 10: 13.

Pronotum about 0.7 times as long as head, slightly more than 0.7 times as long

as humeral width, with long, sparsely distributed, erect setae; posterior margin weakly arched; anterior lobe a little more than 0.75 times as long as posterior lobe. Scutellar spine (Fig. 3) about 1.3 times as long as scutellum, weakly curved upward, blunt-tipped. Foreleg (Fig. 4) densely covered with short, reclining and suberect setae; forefemur with 8 to 9 interolateral and 4 ventral, long spiniform setae (in Fig. 4, apical parts of former 3 setae visible); foretibia with 4 interolateral and 2 ventral, long spiniform setae; foretarsus half as long as tibia. Mid- and hindlegs densely covered with short, decumbent and suberect setae. Hemelytron slightly exceeding posterior apex of abdomen; veins on membrane ambiguous; venation shown as in Fig. 5.

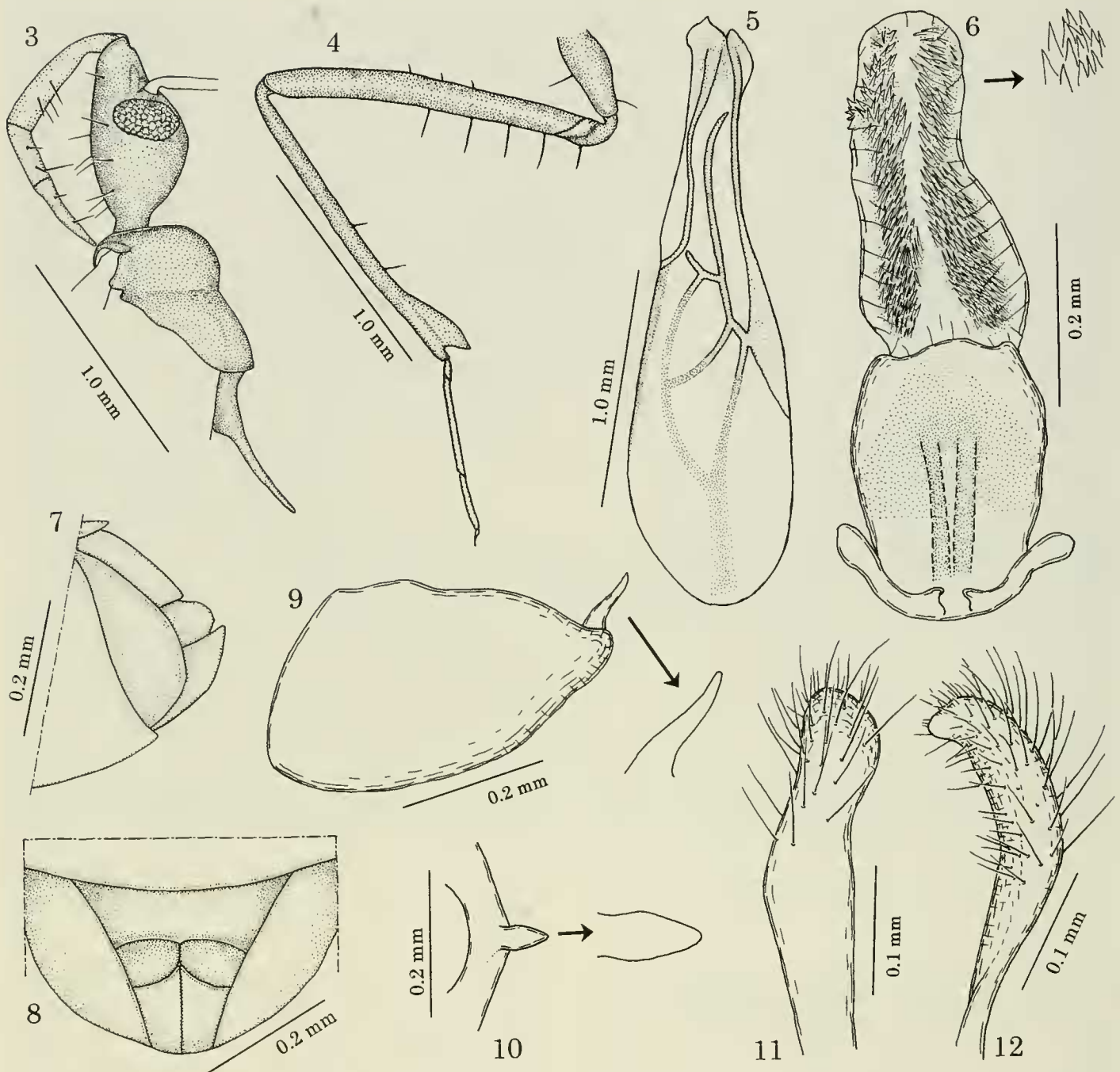
Abdomen wider than hemelytra, covered with short, decumbent setae except for anterior part, apically rounded in male, subacute in female.

Male genitalia: Pygophore (Figs. 9, 10) somewhat flattened dorsoventrally, with posterior process; posterior process tapering, slightly sinuate and apically obtuse in lateral view (Fig. 9), spatula-shaped and apically rounded in dorsal view (Fig. 10). Parameres (Figs. 11, 12) curved inward, weakly constricted dorsoventrally near middle, rounded apically, covered with erect and suberect setae variable in length. Phallus (Fig. 6) elliptical, somewhat flattened dorsoventrally; phallosoma sclerotized on dorsum; endosoma long, membranous, with 2 rows of minutely spinulate areas.

Female genitalia: Tergite VIII with rounded posterior margin (Fig. 8). Tergite IX declivous (Fig. 7). Valvifer I with rounded margin (Figs. 7, 8); valvula I (Figs. 7, 8) large, nearly triangular, subacute at apex. Styloids (valvula III) oblong, well visible between tergite IX and valvula I (Fig. 8).

Holotype.—♂, Vietnam: Dambri, Bao Loc, Lam Dong Prov., 28.xii.2001, T. Ishikawa.

Paratypes.—Vietnam: 1♂, same data as for holotype; 1♂, 1♀, Loc Thang Ward, Bao Lam, Lam Dong Prov., 27.xii.2001, T.



Figs. 3–12. *Carayonia orientalis* (only long, spiniform setae shown on Figs. 3–10). 3, Head, prothorax and scutellum, lateral view. 4, Left foreleg. 5, Right hemelytron. 6, Phallus, dorsal view. 7–8, Apical part of female abdomen, lateral and posterior views. 9, Pygophore, lateral view. 10, Apical part of pygophore, dorsal view. 11–12, Left paramere, lateral and dorsal views.

Ishikawa. Laos: 1♂, Vang Vieng, Viengtiang Prov., 1.ii.2002, T. Kishimoto. Thailand: 1♂, Mae Sa, 400–450 m alt., Mae Rim, Chiang Mai, 12.viii.2001, S. Nagashima; 1♀, Mae Sa, 450 m alt., Mae Rim, Chiang Mai, 18.viii.2001, light trap, T. Ishikawa.

Distribution.—Vietnam, Laos, Thailand; this is the first record for the genus *Carayonia* from continental Asia.

Etymology.—From the Latin, *orientalis*, referring to the type locality; an adjective.

Remarks.—This new species is distinguished from other members of *Carayonia* by a combination of such features as the body 3.3–3.9 mm long, the head about 1.7 times as long as width across eyes, antennal segment IV much longer than segment III, rostral segment I twice as long as segment II, the venter of the forefemur with four long spiniform setae, the venter of the foretibia with two long spiniform setae, the scutellar spine 1.3 times as long as the scutellum, and the evenly curved parameres.

This species inhabits marshes grown with monocots in Vietnam and Thailand, and was found on low parts of shrubs. A single individual was attracted to light. No other information is available on its biology.

KEY TO ASIAN SPECIES OF *CARAYONIA*

1. Pronotum 1.3 times as long as scutellum and scutellar spine combined
 *C. culiciformis* Usinger
- Pronotum as long as scutellum and scutellar spine combined 2
2. Scutellar spine twice as long as scutellum; venter of foretibia with 4 long spiniform setae; parameres bent at middle *C. nitens* (Miller)
- Scutellar spine 1.3 times as long as scutellum (Fig. 3); venter of foretibia with 2 long spiniform setae (Fig. 4); parameres evenly curved inward (Fig. 12) *C. orientalis*, n. sp.

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